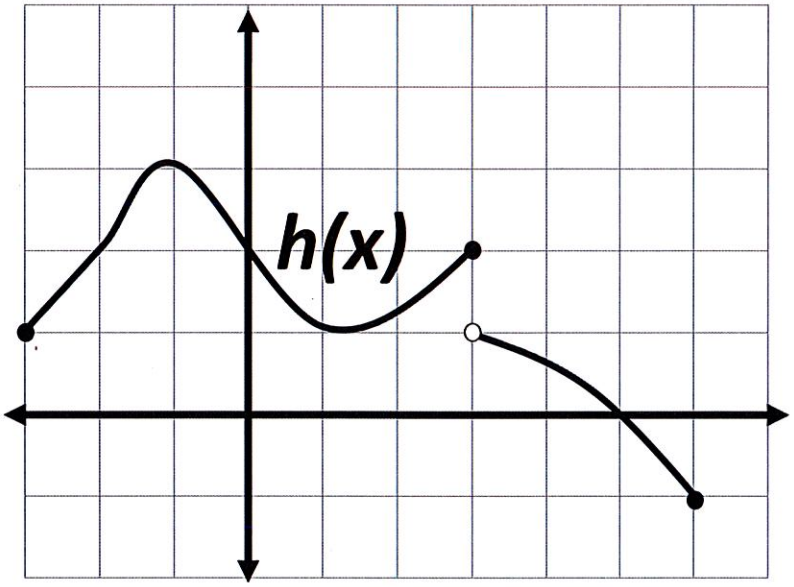
Michael T. Davis Pre-Calculus	1.6 Function Graph Analysis Homework September 21-22, 2015

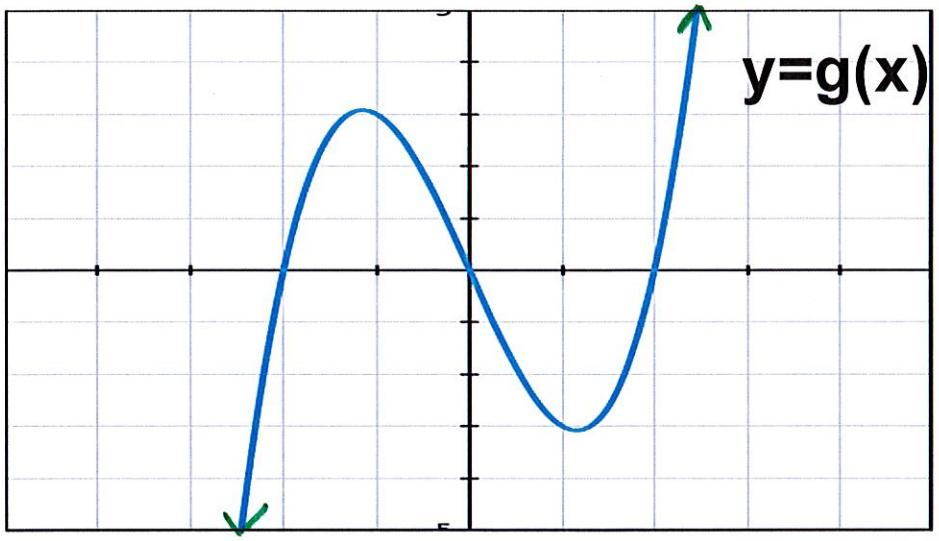
Name: Answers

1.



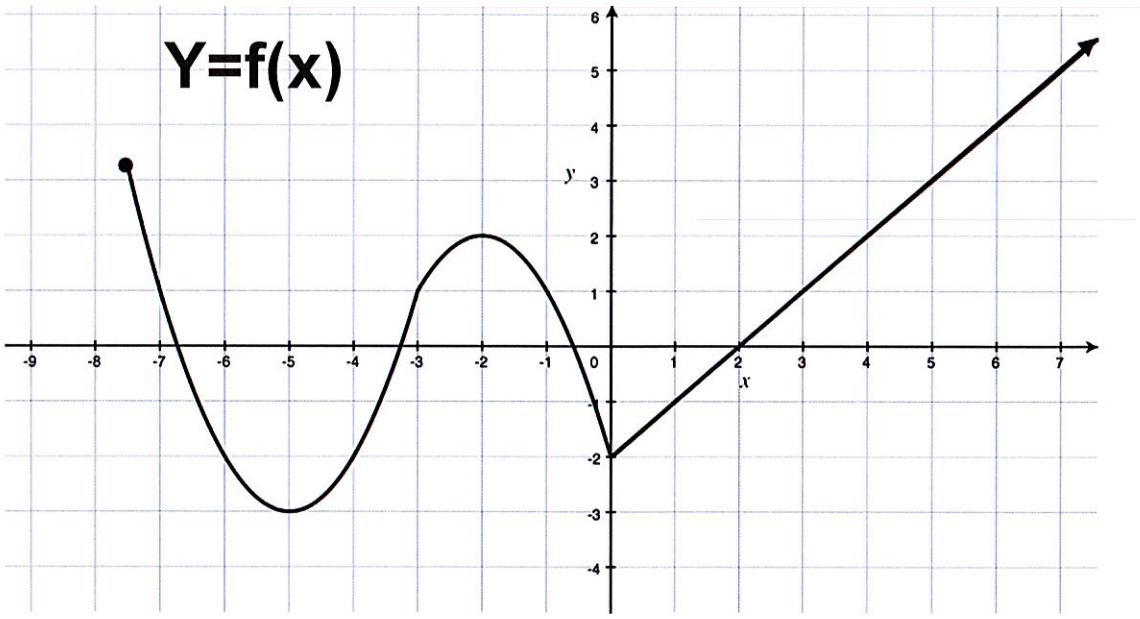
Domain:	**Range:**
$[-3, 6]$	$[-1, 3]$
Increasing:	**Decreasing:**
$[-3, -1.1] \cup [1.25, 3]$	$[-1.1, 1.25] \cup (3, 6]$
Maximum:	**Minimum:**
$y = 3.1$	$y = -1$
Concave up:	**Concave Down:**
$[0, 3]$	$[-1.8, 0] \cup (3, 6]$
f(x) > 0	**f(x) ≤ 0**
$[-3, 5)$	$[5, 6]$
x-intercept(s):	**y-intercept:**
$(x, y) = (5, 0)$	$(x, y) = (0, 2)$

2.



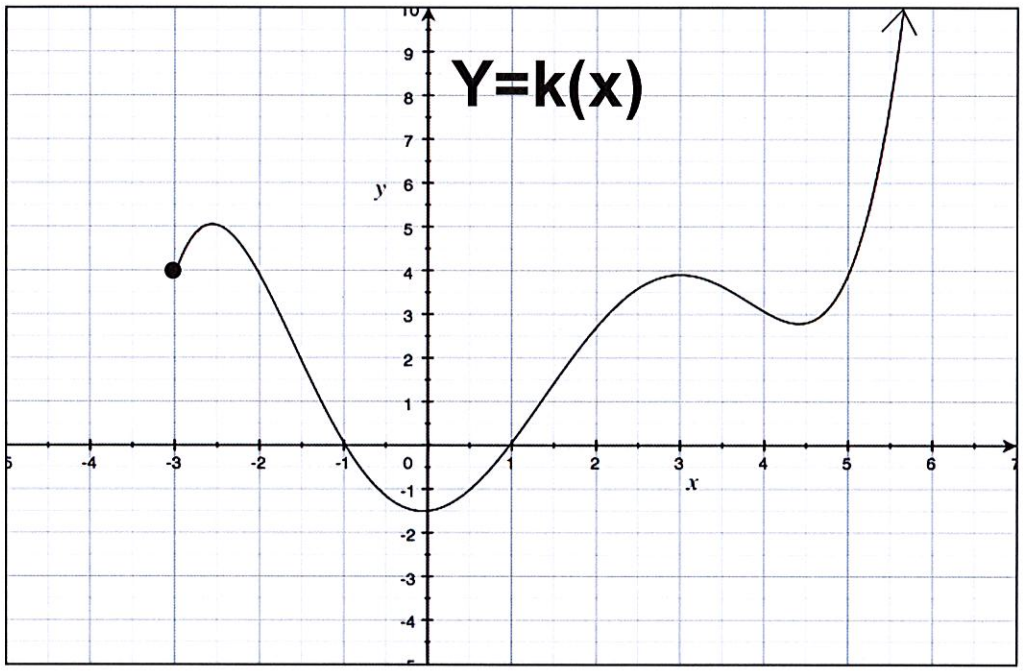
Domain: $(-\infty, \infty)$	**Range:** $(-\infty, \infty)$
Increasing: $(-\infty, -1.2] \cup [1.1, \infty)$	**Decreasing:** $[-1.2, 1.1]$
Maximum: ~~$y=3$~~ None	**Minimum:** ~~$y=-3$~~ None
Concave up: $(0, \infty)$	**Concave Down:** $(-\infty, 0)$
f(x) > 0 $(-2, 0) \cup (2, \infty)$	**f(x) ≤ 0** $(-\infty, -2) \cup (0, 2)$
x-intercept(s): $(x,y)=(-2,0)$ $(x,y)=(0,0)$ $(x,y)=(2,0)$	**y-intercept:** $(x,y)=(0,0)$

3.



Domain: $[-7.5, \infty)$	**Range:** $[-3, \infty)$
Increasing: $[-5, -2] \cup [0, \infty)$	**Decreasing:** $[-7.5, -5] \cup [-2, 0]$
Maximum: None	**Minimum:** $y = -3$
Concave up: $[-7.5, -3]$	**Concave Down:** $[-3, 0]$
f(x) > 0 $[-7.5, -6.8) \cup (-3.2, -0.5) \cup (2, \infty)$	**f(x) ≤ 0** $[-6.8, -3.2] \cup [-0.5, 2]$
x-intercept(s): $x = -6.8$ $x = -3.2$ $x = -0.5$ $x = 2$	**y-intercept:** $y = -2$ or $(0, -2)$

4.



Domain: $[-3, \infty)$	**Range:** $[-1.5, \infty)$
Increasing: $[-3, -2.6] \cup [0, 3] \cup [4.4, \infty)$	**Decreasing:** $[-2.6, 0] \cup [3, 4.4]$
Maximum: None	**Minimum:** $y = -1.5$
Concave up: $[-1.5, 1.5] \cup [3.75, \infty)$	**Concave Down:** $[-3, -1.5] \cup [1.5, 3.75]$
f(x) > 0 $[-3, -1) \cup (1, \infty)$	**f(x) ≤ 0** $[-1, 1]$
x-intercept(s): $(x, y) = (-1, 0)$ $(x, y) = (1, 0)$	**y-intercept:** $(x, y) = (0, -1\frac{1}{2})$